

REMARKS

Reconsideration and withdrawal of the rejection set forth in the above-mentioned Official Action in view of the foregoing amendments and the following remarks are respectfully requested.

Claims 1-3, 5 and 6 remain pending in the application, with Claims 1 and 5 being independent and having been amended herein.

Claims 1-3, 5 and 6 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,109,719 (Cornell) in view of U.S. Patent No. 5,736,995 (Bohorquez, et al.). These rejections are respectfully traversed.

As recited in independent Claim 1, the present invention relates to an inkjet recording apparatus for performing recording by ejecting ink onto a recording medium using a plurality of element substrates. The apparatus includes the element substrates, each having plurality of heating means to eject the ink. The apparatus further includes a common support member, obtaining means, recording mode setting means and control means. The common support member, on which the plurality of element substrates are arranged, conducts heat among the element substrates. The obtaining means obtains temperature of a printing head including the common support member and the plurality of element substrates. The recording mode setting means sets an element substrate that is to be used for recording and an element substrate that is not to be used for recording, from among the plurality of element substrates. The control means heats, if the obtained

temperature of the printing head is in a predetermined range, only the element substrate that is set by the recording mode setting means to be not used for recording to adjust the temperature of the element substrate to be used for recording utilizing heat conduction.

As recited in independent Claim 5, the present invention relates to an inkjet recording apparatus for performing recording by ejecting ink onto a recording medium using a plurality of element substrates. The apparatus includes the element substrates, each having a plurality of heating means to eject the ink. The apparatus further includes a common support member, obtaining means, discrimination means and control means. The common support member, on which the plurality of element substrates are arranged, conducts heat among the element substrates. The obtaining means obtains temperature of a printing head including the common support member and the plurality of element substrates. The discrimination means discriminates between an element substrate that is to be used and an element substrate that is not to be used for the next recording to be performed. The control means heats, if the obtained temperature of the printing head is in a predetermined range, only the element substrate that is discriminated by the discrimination means to be not used before the element substrate discriminated to be used for recording starts a recording operation, to adjust the temperature of the element substrate to be used utilizing heat conduction.

Cornell is directed to a printhead that utilizes semiconductor substrates or chips 76, 78, to which nozzle plates 80, 82 are attached. The substrates or chips are provided in pockets 72, 74 in carrier 70. As recognized by the Examiner, in Cornell there is no disclosure or suggestion of heating an element substrate to be not used for recording to adjust temperature of an element substrate to be used for recording utilizing head conduction, as is recited in independent Claim 1. Nor does Cornell disclose or suggest heating an element substrate that is to be not used before the element substrate to be used for recording starts a recording operation, to adjust the temperature of the element substrate to be used utilizing heat conduction, as is recited in independent Claim 5.

Thus, Cornell fails to disclose or suggest important features of the present invention recited in the independent Claims 1 and 5.

Bohorquez, et al. relates to temperature control of thermal ink jet printheads. Heating, non-printing pulses and printing pulses are delivered to the ink firing resistors, depending on whether the measured temperature of the printhead substrate is below a reference temperature. However, the discrimination as whether to deliver a non-printing pulse or a printing pulse is performed on a resistor-by-resistor basis. There is no disclosure of applying such pulses on a substrate basis with each substrate having a plurality of heating means to eject the ink. Nor does Bohorquez, et al. perform heating control if the obtained temperature of the printhead is in a predetermined range, as is also

recited in the independent claims. Thus, Bohorquez, et al. fails to remedy the deficiencies of Cornell noted above with respect to independent Claims 1 and 5.

Accordingly, independent Claims 1 and 5 are patentable over the citations of record. Reconsideration and withdrawal of the § 103 rejection are respectfully requested.

For the foregoing reasons, Applicants respectfully submit that the present invention is patentably defined by independent Claims 1 and 5. Dependent Claims 2, 3 and 6 are also allowable, in their own right, for defining features of the present invention in addition to those recited in the independent claims. Individual consideration of the dependent claims is requested.

Applicants submit that the present application is in condition for allowance. Favorable reconsideration, withdrawal of the rejection set forth in the above-noted Office Action, and an early Notice of Allowability are requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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